



Patent
Attorney's Docket No. 006523-150

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)

Andrew E. MEYER, et al.)

Application No.: 08/821,760)

Filed: March 20, 1997)

For: VISUAL LATCHING INDICATOR)
FOR AN ELECTRICAL BUSHING)
AND TERMINATOR)

Group Art Unit: 2109

Examiner: H. Sough

Appeal No.

#111 Appeal
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SEP 11 1998
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SEP 18 1998

GROUP 2100

BRIEF FOR APPELLANT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This appeal is from the decision of the Primary Examiner dated March 19, 1998 (Paper No. 8), finally rejecting claims 13, 19 and 20, which are reproduced as Exhibit A to this brief.

A check covering the [] \$155.00 [x] \$310.00 requisite Government fee and two extra copies of this brief are being filed herewith.

The Commissioner is authorized to charge any fees that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

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I. Real Party in Interest

The real party in interest is the assignee, Cooper Industries Inc.

II. Related Appeals and Interferences

There are no related appeals or interferences.

III. Status of Claims

Claims 13, 19 and 20 remain in the application and are under appeal.

IV. Status of Amendments

No amendments have been filed subsequent to the final rejection.

V. Summary of the Invention

The present invention relates to the interconnection of electrical distribution elements and, in particular, to the interconnection between a loadbreak elbow terminator 100 and a bushing 112 (see Figs. 5-6).

Electrical distribution equipment, such as a deadfront switch gear arrangement, typically includes fixed electrical bushings 112 which are to be connected to external electrical cables (not shown in Figs. 5-6, but see cable 19 in the non-claimed embodiment of Figs. 1-4). The fixed bushings are mounted in a wall of the electrical equipment and have their outer ends arranged to be connected to the cables.

One way of achieving this connection is by inserting an elbow terminator 100 onto the bushing 112, the terminator being coupled to the cable. The elbow terminator, which typically comprises a tapered socket 115 in which an electrical probe (see probe 18 in Fig. 1) is mounted, is intended to be inserted onto the fixed bushing such that a tapered tongue 118 of the bushing enters the socket. In so doing, a

conductive tube (see tube 26 in Fig. 3) disposed within the tongue makes electrical connection with the probe, thereby connecting the cable to the fixed bushing.

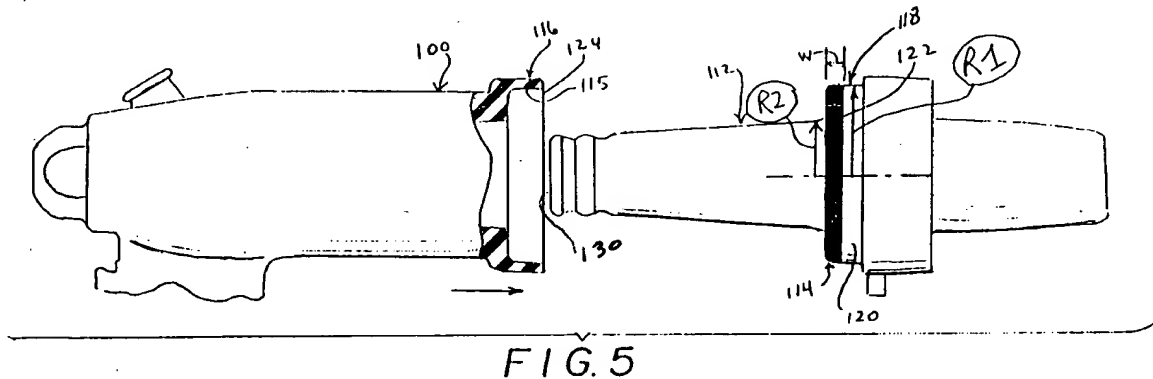
The elbow terminator is secured to the bushing by means of a latching ring (see ring 34 of Fig. 1) disposed at an inner end of the socket. That latching ring snaps into an annular latching groove (see groove 32 of Fig. 1) formed in the outer periphery of the leading end of the tongue when the elbow terminator is pushed onto the fixed bushing.

The elbow terminator is maneuvered onto the bushing by means of a hand-held implement, commonly known as a hot stick, which enables the operator to be situated at a distance, (e.g., three to five feet) for safety reasons. The hot stick grabs a hook eye affixed to the elbow terminator. It may occur, however, that during the mating of the terminator and the bushing, the tongue does not completely enter the socket, whereby the latching ring does not tightly grip the latching socket. That unlatched condition, which is potentially dangerous, is difficult for the operator to visually detect, especially since the operator will likely be standing at least three to five feet from the terminator bushing.

It would therefore be desirable to facilitate the ability of the operator to detect an unlatched condition, especially when standing remotely of the terminator and bushing.

The present invention solves that need by an embodiment depicted in Figs. 5 and 6 wherein a color band 114 is provided on the tongue 118 so as to be visible to an operator from a distance. That is accomplished by forming the color band flush on a portion of an outer circumferential surface of the tongue. That portion of the surface is spaced radially from a longitudinal axis by a first radial distance R1 (see the marked-up copy of Fig. 5 shown below) and wherein all other portions of the outer surface of the tongue disposed between the color band and the free end 130 of the tongue are spaced

radially from the center axis by a radial spacing no larger than the first radial distance, e.g. a radius R2 shorter than R1.



As a result, an operator standing remotely from the bushing 112 and holding the terminal 100 by a hot stick will be able to see when the color band has been covered by the elbow terminal 100, thereby ensuring that a proper latching has been made.

VI. The Issues

At issue is whether claims 13, 19 and 20 are obvious over Eley (U.S. Patent No. 4,113,339) in view of Laipply et al. (U.S. Patent No. 4,793,637).

VII. Grouping of Claims

Dependent claims 19 and 20 stand or fall together and both are independently patentable over independent claim 13.

VIII. Argument

Claim 13 recites that the portion of the outer circumferential surface of the tongue 118 on which the color band 114 is disposed flush (i.e., without indentation) is spaced radially from the center axis by a first radial distance, and that all other portions of the outer circumferential surface disposed between the free end 130 and the color band are spaced radially from the center axis by a radial spacing no larger than the first radial distance.

Consequently, an operator attempting to insert the terminator 100 onto the tongue 118 has an unobstructed view of the color band. That is important, because the operator may be using a hot stick to maneuver the terminator 100 and thus would be located three to five feet from the tongue. An unobstructed view of the color band is thus highly beneficial to ensure that the operator is able, from a distance, to determine when the color band has been fully covered by the flange 116 of the terminator (i.e., that the terminator has been properly secured to the tongue).

None of the references discloses or teaches such a structure. The Laipply et al. patent discloses positioning a color band at the bottom of an annular groove (see column 4, lines 1-3 of Laipply et al.). Thus, the color band will not be flush with the surface in which the groove is formed and a view thereof will be obstructed, i.e., completely obstructed when viewed from three to five feet from an end of the bushing 30, along a line of sight S.

In attached Exhibit B it is shown how Fig. 2 of Eley should be modified in view of the teaching of Laipply et al. That is, an annular groove has been formed in the tongue 32 of the bushing 30 of Eley, with the floor of the groove having a color band.

It will be appreciated that the view of an operator standing three to five feet from an end of the bushing will be at least partially blocked by a side of the groove, thereby making it more difficult if not impossible, to visually verify that a proper connection has been made. The operator may have to move closer to the tongue, thereby diminishing the safe distance between the operator and the bushing 30.

There is no obvious combination of Eley and Laipply et al. which would result in the presently claimed invention. It is stated in the Official Action that "it would have been within the level of ordinary skill in the art to apply any desirable shape of the color band at any desirable location including the claimed shape (i.e., flush with the surface in which the color band is applied) and the location." It is submitted that this is pure conjecture; only Applicant teaches an arrangement of the color band which makes the use of a color band practicable in the presently claimed environment.

Accordingly, it is submitted that claim 13 distinguishes patentably over the applied prior art.

Claims 19 and 20 are independently patentable over claim 13, because they recite that the color band is disposed farther radially outwardly from the center axis than all portions of the outer surface the tongue situated between the color band and the free end of the tongue, thereby making the color band even more visible to an operator. That claimed arrangement is not obvious from Eley or Laipply et al.

IX. Conclusion

Accordingly, it is submitted that the final rejection of the claims should be reversed.

Respectfully submitted,

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Exhibit A



MEYER et al. U.S. Serial No. 08/821,760
Reproduced Appealed Claims 13, 19 and 20

13. In combination, an electrical terminator and an electrical bushing component, said terminator including a socket rigidly fixed thereto, and said bushing component including a tongue receivable in said socket to electrically interconnect said terminator and bushing, said tongue and socket including a latching mechanism for positively latching said bushing component and terminator together when said tongue longitudinally enters said socket to a prescribed depth, a color band formed flush on a portion of an outer circumferential surface of said tongue, said portion arranged to enter said socket and be radially covered completely by a covering portion of said socket when said tongue enters said socket to said prescribed length to provide a visual indication of positive latching, said tongue including a longitudinal center axis and a longitudinal free end which constitutes an initial portion of said tongue to enter said socket; said portion of said outer circumferential surface on which said color band is disposed flush being spaced longitudinally from said free end and being spaced radially from said longitudinal axis by a first radial distance, and wherein all other portions of said outer circumferential surface disposed between said color band and said free end being spaced radially from the center axis by a radial spacing no larger than said first radial distance.

19. The combination according to claim 13 wherein said first radial distance is larger than said radial spacing of all portions of said outer circumferential surface disposed between said color band and said free end.

Exhibit A

20. The combination according to claim 13 wherein said outer circumferential surface includes a first portion extending from said free end, and a second portion spaced radially outwardly from said first portion by a radial surface of said tongue oriented perpendicular to said center axis, said second portion defining said portion of said outer circumferential surface on which said color band is disposed.

Exhibit B



EXHIBIT B

ELEY U.S. Patent 4,113,339
 Fig. 2 (Modified) In View of Laipply et al.
U.S. Patent No. 4,793,637

